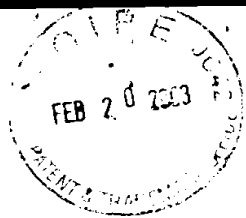## Figure 1A

```
   1 agagagcagctcccttccctcggcgaggaggaaggaagaagaaagccagagagagagag
  61 agagatcatcgcagcttctcctccgaccatttgactgcgactgtgattacaacacaccgt
 121 tgatcctacgaaaaagaggtaatggatactggcggcaattcgctggcgtccggacctgat
                         M  D  T  G  G  N  S  L  A  S  G  P  D    13
 181 ggtgtgaagaggaaagtttgttatttctatgaccctgaggtcggcaattactactatggc
       G  V  K  R  K  V  C  Y  F  Y  D  P  E  V  G  N  Y  Y  Y  G   33
 241 caaggtcatcccatgaagccccatcgcatccgcatgacccatgccctcctcgctcactac
       Q  G  H  P  M  K  P  H  R  I  R  M  T  H  A  L  L  A  H  Y   53
 301 ggtctccttcagcatatgcaggttctcaagcccttccctgcccgcgaacgtgatctctgc
       G  L  L  Q  H  M  Q  V  L  K  P  F  P  A  R  E  R  D  L  C   73
 361 cgcttccacgccgacgactatgtctcttttctccgcagcattacccctgaaacccagcaa
       R  F  H  A  D  D  Y  V  S  F  L  R  S  I  T  P  E  T  Q  Q   93
 421 gatcagattcgccaacttaagcgcttcaatgttggtgaagactgtcccgtctttgacggc
       D  Q  I  R  Q  L  K  R  F  N  V  G  E  D  C  P  V  F  D  G  113
 481 ctttattccttttgccagacctatgctggaggatctgttggtggctctgtcaagcttaac
       L  Y  S  F  C  Q  T  Y  A  G  G  S  V  G  G  S  V  K  L  N  133
 541 cacggcctctgcgatattgccatcaactgggctggtggtctccatcacgctaagaagtgc
       H  G  L  C  D  I  A  I  N  W  A  G  G  L  H  H  A  K  K  C  153
 601 gaggcctctggcttctgttacgtcaatgatatcgtcttagctatcctagagctccttaag
       E  A  S  G  F  C  Y  V  N  D  I  V  L  A  I  L  E  L  L  K  173
 661 cagcatgagcgtgttctttatgtcgatattgatatccaccacggggatggagtggaggag
       Q  H  E  R  V  L  Y  V  D  I  D  I  H  H  G  D  G  V  E  E  193
 721 gcattttatgctactgacagggttatgactgtctcgttcataaatttggtgattacttt
       A  F  Y  A  T  D  R  V  M  T  V  S  F  H  K  F  G  D  Y  F  213
 781 cccggtacaggtcacattcaggatataggttatggtagcggaaagtactactctctcaat
       P  G  T  G  H  I  Q  D  I  G  Y  G  S  G  K  Y  Y  S  L  N  233
 841 gtaccactggatgatggaatcgatgatgagagctatcatctgttattcaagcccatcatg
       V  P  L  D  D  G  I  D  D  E  S  Y  H  L  L  F  K  P  I  M  253
 901 gggaaagttatggaaatttttccgaccagggggctgtggtattgcaatgtggtgctgactcc
       G  K  V  M  E  I  F  R  P  G  A  V  V  L  Q  C  G  A  D  S  273
 961 ctatctggggatcggttaggttgcttcaatctttcaatcaaaggtcatgctgagtgcgtc
       L  S  G  D  R  L  G  C  F  N  L  S  I  K  G  H  A  E  C  V  293
1021 aaatttatgagatcgttcaatgttcccctactgctcttgggtggtggtggttacactatc
       K  F  M  R  S  F  N  V  P  L  L  L  L  G  G  G  Y  T  I  313
1081 cgcaatgttgcccgttgctggtgctacgagactggagttgcacttggagttgaagttgaa
       R  N  V  A  R  C  W  C  Y  E  T  G  V  A  L  G  V  E  V  E  333
1141 gacaagatgccggagcatgaatattatgaatactttggtccagactatacacttcacgtt
       D  K  M  P  E  H  E  Y  Y  E  Y  F  G  P  D  Y  T  L  H  V  353
1201 gctccaagtaacatggaaaataagaattctcgtcagatgcttgaagagattcgcaatgac
       A  P  S  N  M  E  N  K  N  S  R  Q  M  L  E  E  I  R  N  D  373
1261 cttctccacaatctctctaagcttcagcatgctccaagtgtaccatttcaggaaagacca
       L  L  H  N  L  S  K  L  Q  H  A  P  S  V  P  F  Q  E  R  P  393
1321 cctgatacagagactcccgaggttgatgaagaccaagaagatggggataaaagatggat
       P  D  T  E  T  P  E  V  D  E  D  Q  E  D  G  D  K  R  W  D  413
1381 ccggattcagacatggatgttgatgatgaccgtaaacctataccaagcagagtaaaaaga
       P  D  S  D  M  D  V  D  D  D  R  K  P  I  P  S  R  V  K  R  433
1441 gaagctgttgaaccagatacaaaggacaaggatggactgaaaggaattatggagcgtgga
       E  A  V  E  P  D  T  K  D  K  D  G  L  K  G  I  M  E  R  G  453
1501 aaaggttgtgaggtggaggtggatgagagtggaagcactaaggttacaggagtaaaccca
       K  G  C  E  V  E  V  D  E  S  G  S  T  K  V  T  G  V  N  P  473
1561 gtgggagtggaggaagcaagtgtgaaaatggaagaggaaggaacaaacaagggtggggcg
       V  G  V  E  E  A  S  V  K  M  E  E  E  G  T  N  K  G  G  A  493
1621 gagcaggcgtttcctcctaaaacataagactcggagcttctaatttcttgctacttttc
       E  Q  A  F  P  P  K  T  *                                  502  501
1681 tgtctatcaaatgttgctagttaagtttctggagttgttgttgttgtaagcactcctctg
1741 ttttagaggattgagcacggatatgtatttattcgttgcatgtctgaatgatgatatgat
1801 atgacaa
```

Figure 3

```
AtRPD3A  MD-----TGG  NSLAS'GPDG  VKRKVCYFYD  PEVGNYYYGQ  GHPMKPHRIR    45 44
AtRPD3B  MEADESGI--  -SLPS-GPDG  PKRRVSYFYE  PTIGDYYYGQ  GHPMKPHRIR    47
ZmRPD3   MDPSSAGSGG  NSLPSVGPDG  QKRRVCYFYD  PDVGNYYYGQ  GHPMKPHRIR    50
RPD3     MVYEATPFD-  ---EITVKPS  DKRRVAYFYD  ADVGNYAYGA  GHPMKPHRIR    46

AtRPD3A  MTHALLAHYG  LLQHMOVLKP  FPARERDLCR  FHADDEVSEL  RSITPETQCM    95 94
AtRPD3B  MAHSLIIHYH  LHRRLEISRF  SLADASDIGR  FHSPEYVDFL  ASVSPESMGE    97
ZmRPD3   MTHSLLARYG  LLNQMOVYRF  NPARERELCR  FHAEEYINFL  RSVTPETQCM   100
RPD3     MAHSLIMNYG  LYKKMEIYRA  KPATKQEMCQ  FHTDEYIDFL  SRVTPDNLEM    96

AtRPD3A  QI--RQLKRF  NVGEDCPVFD  GLYSFCQTYA  GGSVGGSVKL  NHGLCDIAIN   143 142
AtRPD3B  PSAARNLRRF  NVGEDCPVFD  GLFDFCRASA  GGSIGAAVKL  KRQDADIAIN   147
ZmRPD3   QI--RLLKRF  NVGEECPVLD  GLYSFCQTYA  GASVGGAVFF  NHGH-DIAIN   148 147
RPD3     --FKEESVKF  NVGDDCPVFD  GLYEYCSIEG  GGSMEGAARL  NRGKCDVAVN   144

AtRPD3A  WAGGLHHAKK  CEASGFCYVN  DIVLAILELL  KQHERVLYVD  IDIHHGDGVE   193 192
AtRPD3B  WGGGLHHAKK  SEASGFCYVN  DIVLGILELL  KMFKRVLYID  IDVHHGDGVE   197
ZmRPD3   WSGGLHHAKK  CEASGFCYVN  DIVLAILELL  KHHQRVLYVD  IDIHHGDGVE   198 197
RPD3     YAGGLHHAKK  SEASGFCYLN  DIVLGIIELL  RYHERVLYID  IDVHHGDGVE   194
             *  *             *                           *   *   * *

AtRPD3A  EAFYATDRVM  TVSFHKFGDY  FPGTGHIQDI  GYSSGKYYSL  NVPLDDGIDL   243 242
AtRPD3B  EAFYTTDRVM  TVSFHKFGDF  FPGTGHIRDV  GAEKGKYYAL  NVPLNDGMDL   247
ZmRPD3   EAFYTTDRVM  TVSFHKFGDY  FPGTGDIRDI  GHSKGKYYSL  NVPLDDGIDL   248 247
RPD3     EAFYTTDRVM  TCSFHKYGEF  FPGTGELRDI  GVGAGKNYAV  NVPLRDGIDD   244
             *             *  *

AtRPD3A  ESYHLLFKPI  MGKVMEIFRP  GAVVLQCGAD  SLSGDRLGCF  NLSIKGHAEC   293 292
AtRPD3B  ESFRSLFRFL  IQKVMEVYQP  EAVVLQCGAD  SLSGDRLGCF  NLSVKGHADI   297
ZmRPD3   ESYQSLFKPI  MGKVMEVFRP  GAVVLQCGAD  SLSGDRLGCF  NLSIKGHAEC   298 297
RPD3     ATYRSVFEPV  IKKIMEWYQP  SAVVLQCGGE  SLSGDRLGCF  NLSMEGHANC   294

AtRPD3A  VKFMRSFNVP  LLLLGGGGYT  IRNVARCWCY  ETGVALGVEV  EDKMEEHEYY   343 342
AtRPD3B  LRFLRSYNVP  LMVLGGEGYT  IRNVARCWCY  ETAVAVGVEE  DNKLPYNEYF   347
ZmRPD3   VRYMRSFNVP  LLLLGGGGYT  IRNVARCWCY  ETGVALGQEP  EDKMEVNEYY   348 347
RPD3     VNYVKSFGIP  MMVVGGGGYT  MRNVARTWCF  ETGLLNNVVL  RKDLPYNEYY   344

AtRPD3A  EYFGPDYTLH  VAPSNMENKN  SRQMLEEIRN  DLLHNLSKLQ  HAPSVPFQEI   393 392
AtRPD3B  EYFGPDYTLH  VDPSNMENKN  TPKDMERIRN  TLLHNLSGLI  HAPSVOFOHT   397
ZmRPD3   EYFGPDYTLH  VAPSNMENKN  TRDOLDDIPS  ----KLSKLR  HAPSVHFOEP   394 393
RPD3     EYYGPDYKLS  VRPSNMFNVT  TPEYLDKVMT  NIFANLENTK  YAPSVQLNHT   394

AtRPD3A  PPDTETPEVD  EDQFDGDKRW  DPDSDMDVDD  D--------R  KPIPSRVKRE   435 434
AtRPD3B  PPVNRVLD--  ----------  EPEDDME---  --------TP  KP---RIWSG   421
ZmRPD3   VPDTEIPEQD  EDQDDPDERH  DPDSDMEVDD  HKAVEESSRE  SILGIKIKRF   444 443
RPD3     P---------  ----------  DAEDLGDVEE  ESA-------  ----------   408 409

AtRPD3A  AVSPDTKDKD  ELEGIMERGK  GCEVEVDESS  STEVT---GV  NPVEVEEAS-   481 480
AtRPD3B  TATYESDSDC  DDEPL--HGY  ST--------  --RGGATTER  DSTEDEMDT    459
ZmRPD3   FGENATRVQD  EGRVASEH-R  ELEPMAEDIE  SSEQAPQAEA  SAMAIDEPTN   493 492
RPD3     ----------  ----------  ----------  ----------  ------EAK    412 413

AtRPD3A  VKMEEEGTNE  GGAEQEFEPE  T                                    502 501
AtRPD3B  DNPEEDVNP-  -------ESS                                       471
ZmRPD3   VKNEPESSTE  EOGQAEAYHE  P                                    514 513
RPD3     TEGGSQYARD  EHVEHDNEFY                                       422 433
```

Figure 4

```
AtHD2A  MEFWGIEVKS GKFVTVTPEE GILIHRSQAS LGECKNKKGE FVPLHVKVGN   50
AtHD2B  MEFWGVAVTE KNATKVTPEE DSLVHISQAS L-DCTVKSGE SVVLSVTVGG   49
ZmHD2   MEFWGLEVKP GSTVKCFEGY GFVLHLSQAA LGES KFSD NALMYVHIDD   48

AtHD2A  QNLVLGTLST ENIPCLFCDL VPDKEFELSH TWGKGSVYFV GYKTPNIEPQ  100
AtHD2B  AKLVIGTLSQ DKFPQISFDL VPDKEFELSH SGTKANVHFI GYKSPNIEQD   99
ZmHD2   QKLAIGTLSV DKNPHICFDL IFDKEFELSH TSKTTSVFFT GYFVEQPFEE   98

AtHD2A  GYSEEEEEE- EEEVPAGNAA ---------- ---KAVAKPK AKPAEVKPAV  136
AtHD2B  CFTSSDEEDV PEAVPAPAPT AVTANGNEGA AVVKADTKPK AKPAEVKPAE  149
ZmHD2   CEMDLDSEDE DEELNVE--- VVKENGKADE KKQFSQEKAV EAFSKSSEDS  145

AtHD2A  ----DDEEDE SDS-E----- -------GME EDDSDGEDSE EEE-------  162
AtHD2B  EFPESDEEDE SDDEDESEEL --DDSEKGME VDEDDSDDDE EEDSEDEEEE  197
ZmHD2   KFSKDCDDSD EDETCDSDED ETDDSDEELS SEEGEDDSED EDETSEDEEE  195

AtHD2A  PTP--KKPAS -SKKRANETT PKAPVSAKKA KVAV----TP QKTDEEK---  202
AtHD2B  ETP--KKPEP INKKRPNESV SKTPVSGKKA FPSAAPASTP QK-----TEK  240
ZmHD2   ETPXXKKPEY GKKRFNESSV XETDLSEKKA KVATPSS XXQKTGEE----  238

AtHD2A  -KGGKA---- ---------- --------AN QSPKSASQVS CGSC-KKTEN  229
AtHD2B  KKGG--HTAT PHPAK----- KGGKSPVNAN QSPKSGGCSC CGNNNKKPFN  293
ZmHD2   -KGAAVHVAT PHPAKGKTIV NNDKSVKSPK SAPKSGGSFP CKPCSS-SFI  286

AtHD2A  SGNALE-SHN KAFHAAAK                                     245
AtHD2B  SGKQFGGSNE KGSNKGKGKG RA                                305
ZmHD2   SETALQA-HS RAKMGASESQ VQ                                307
```